

## Section 1. Introduction

California's rich natural heritage has supported commercial and recreational fisheries, which provide consumers with a healthy source of high-quality protein, recreational anglers with enjoyable experiences, and many coastal communities with sources of employment and revenues. The nearshore waters off California's coast are among the top destinations for recreational scuba divers from around the world. Whether watching the flight of birds or the graceful forms of dolphins and whales, people also have increasingly sought enjoyment from observing marine wildlife. The dramatic growth of marine aquaria along the coast also serves as evidence of growing public interest in ocean wildlife, while California's century-long renown as a leader in marine science has only grown. California enjoys beautiful and productive marine resources.

In 1999, the State of California adopted the Marine Life Protection Act (MLPA; Stats.1999, Chapter 1015), one in a long history of statutes and regulations designed to protect California's ocean and estuarine waters and the species and habitats found within them. The Department of Fish and Game (Department) is required to prepare and present to the Fish and Game Commission (Commission) a master plan that will guide the adoption and implementation of the Marine Life Protection Program [Fish and Game Code (FGC) Section 2855].

Another relevant law, the Marine Managed Areas Improvement Act (Stats. 2000, Chapter 385), was adopted in 2000. This law sought to clarify and simplify the variety of existing designations for marine managed areas (MMAs) which include marine protected areas (MPAs). The two measures, taken together, represent a declaration that California intends to protect its oceans and the marine species that live there and provide direction on how to proceed.

In 2004 the legislature approved and the Governor signed the California Ocean Protection Act (Stats. 2004, Chapter 719). One purpose of this law is to coordinate activities of state agencies that are charged with the protection and conservation of coastal waters and ocean ecosystems, in order to improve the effectiveness of state efforts to protect ocean resources within existing fiscal limitations. The legislation identifies the following objectives:

- (a) Provide a set of guiding principles for all state agencies to follow, consistent with existing law, in protecting the state's coastal and ocean resources.
- (b) Encourage cooperative management with federal agencies, to protect and conserve representative coastal and ocean habitats and the ecological processes that support those habitats.
- (c) Improve coordination and management of state efforts to protect and conserve the ocean by establishing a cabinet level oversight body responsible for identifying more efficient methods of protecting the ocean at less cost to taxpayers.
- (d) Use California's private and charitable resources more effectively in developing ocean protection and conservation strategies.
- (e) Provide for public access to the ocean and ocean resources, including to marine protected areas, for recreational use, and aesthetic, educational, and scientific purposes, consistent with the sustainable long-term conservation of those resources.

Related to this legislation, on October 18, 2004, Governor Arnold Schwarzenegger released an ocean action plan, *Protecting Our Ocean: California's Action Strategy*, with four primary goals:

- Increase the abundance and diversity of species in California's oceans, bays, estuaries and coastal wetlands.
- Make water in these bodies cleaner.
- Provide a marine and estuarine environment that Californians can productively and safely enjoy.
- Support ocean dependent economic activities.

Part of this ocean action plan is full implementation of the MLPA. Among other policies, the ocean action plan also addresses the relationship between California's management activities and the Department of Defense as follows:

- Coordinate California ocean and coastal management activities that impact military facilities/operations with the Department of Defense, as well as requesting the Department of Defense to coordinate their activities and operational needs with the State of California to the extent possible without compromising national security objectives.

### ***Early Years***

From its very first days as a state in 1850, California has adopted statutes and regulations dealing with the ocean, fisheries, and protection of resources, commerce and industry. In an historic sense, California's history of involvement (as with most other states) has been through early steps to regulate fishing and define health and safety requirements for those who earn a living on the waters, and to protect outstanding areas and features along the California coast and in state waters.

In the early decades of statehood, California's policy toward natural resources reflected the desire of government at all levels to promote economic expansion by bringing natural resources into production (McEvoy 1986). Even so, lawmakers in California, as elsewhere, became concerned that the expansion of fishing might well threaten the long-term economic health of the fishing industry. In 1852, the California State Legislature passed its first fishing statute to regulate the Sacramento River salmon fishery, and continued to pass more regulations over the next several decades. In 1870, the legislature responded to the concerns of sport fishermen by establishing a State Board of Fish Commissioners, which later became the Commission. In this and other ways, California led the nation. By the end of the 19<sup>th</sup> century, the California State Legislature had adopted a body of fisheries management law that was a model for its time.

At the same time, the courts repeatedly upheld the importance of the state's role in protecting its resources. In 1894, for instance, the California State Supreme Court found that "The wild game within a state belongs to the people in their collective, sovereign capacity; it is not the subject of private ownership, except in so far as the people may elect to make it so; and they may, if they see fit, absolutely prohibit the taking of it, or any traffic or commerce in it, if deemed necessary for its protection or preservation, or the public good."

Californians often feel strongly about both available fisheries and regulations on access. Some assert that article 1, section 25, of the California Constitution gives the public a “right to fish.” It states “The people shall have the right to fish upon and from the public lands of the State and in the waters thereof...provided, that the legislature may by statute, provide for the season when and the conditions under which the different species of fish may be taken.”

However, this “right to fish” is not absolute. In 1918, the California Supreme Court considered whether a law providing for the licensing of fishermen was unconstitutional because it violated article 1, section 25. The court rejected the argument, finding that the provision authorizing the legislature to fix the seasons and conditions under which fish are taken was intended to leave the matter under the legislature’s discretion [*Paladini v. Superior Court* (1918) 178 Cal. 369]. As recently as 1995, a court reaffirmed the qualified, not fundamental, right to fish and that the language of the State Constitution was not intended to curtail the ability of the legislature (or the Commission through legislated authority) to regulate fishing [*California Gillnetters Association v. Department of Fish and Game* (1995) 39 Cal.App.4th 1145].

Also, section 25 must be read in connection with article 4, section 20 (formerly section 25½), which states that the California State Legislature may enact appropriate laws for protection of fish and game, and may delegate to the Commission such powers relating to protection and propagation of fish and game [*Ex parte Parra* (1914) 24 Cal.App. 339, 340]. In that respect, the California Supreme Court found it “most apparent” that the purpose of (now) article 4, section 20 “was to clothe the Legislature with ample power to adequately protect the fish and game of the state.” Further, the California Supreme Court has long declared that the power to regulate fishing has always existed as an aspect of the inherent power of the legislature to regulate the terms under which a public resource may be taken by private citizens [*In re Phoebevius* (1918) 177 Cal. 238, 245-246; *People v. Monterey Fish Products Company* (1925) 195 Cal. 548, 563]. This regulatory power clearly includes the regulation of fishing within MPAs [Section 2860, FGC].

Like other economic activities, from agriculture to manufacturing, fishing began expanding rapidly in the first few decades of the 1900s. In 1912, the legislature responded by authorizing staff for the Commission, which found itself with greater and greater responsibilities for managing industrial fisheries, in particular. In 1927, the legislature created a Department of Natural Resources, within which it housed a Division of Fish and Game.

## ***Post World War II***

After World War II, the marine policies of California and other state and federal governments were based largely on several assumptions that reflected the progressive thinking of the time. First, the abundance of marine wildlife was thought to be nearly without practical limits. Second, scientists and fishery managers believed that we possessed enough knowledge to exploit marine populations at very high levels over long periods of time without jeopardizing them. Third, the value of marine wildlife was principally as a commodity to be processed and traded. Finally, the chief challenge in commercial fisheries management was to expand domestic fishing fleets in order to exploit the assumed riches of the sea.

In 1945, the legislature granted the Commission discretionary authority over recreational fisheries. In 1947, the legislature instituted a tax on sardine landings that was used to fund

research into causes for the decline in sardine abundance. These activities led to the inauguration of one of the world's longest series of fisheries research cruises, the California Cooperative Oceanic Fisheries Investigations, CalCOFI, a cooperative venture of the California Department of Fish and Game, Scripps Institution of Oceanography and the National Marine Fisheries Service.

Several factors combined to challenge these assumptions. Changing fishing technologies and expanding fleets increased harvests. Poor forestry practices resulted in sediment loading to coastal watersheds that impeded spawning. Development decreased wetlands, reducing their important capacities in marine life cycles and in filtering run off.

In the face of disturbing declines in a number of fisheries, state and federal fisheries agencies around the country began an intensive review of prevailing policies in the mid-1960s. In 1967, the California State Legislature passed the California Marine Resources Conservation and Development Act to develop a long-range plan for conservation and development of marine and coastal resources (1967 California Statutes Ch. 1,642). In the same year, Governor Ronald Reagan imposed an emergency two-year moratorium on commercial sardine fishing (1967 California Statutes Ch. 278).

During the 1960s, recreational fishermen convinced the legislature to remove certain species of fish from commercial exploitation, such as calico bass and striped marlin. Beginning in the 1970s, traditional views of marine fish populations as commodities began shifting more rapidly. Marine wildlife and ecosystems were increasingly valued for themselves and for uses such as tourism, education, and scientific research. Recognition of the need to balance the capacity of fishing fleets with the often limited and uncertain productive capacity of marine species grew. Rather than seeking to extract the maximum yield from marine species, fisheries managers began seeking levels that would be sustainable into the distant future.

Changes also occurred in marine recreational activities. Catch and release programs became important in some fisheries. The value of the experience of fishing was recognized as being greater than just the monetary value of fishing to local businesses. Non-consumptive recreation, including surfing, diving, sightseeing, and other activities, increased dramatically. Additionally, the public became more interested in the value of healthy marine environments for both recreational use and the intrinsic value of the ocean itself.

### ***California's Marine Heritage***

For 1,100 miles, the spectacular mass of California's lands meets the Pacific Ocean. In many areas, mountains plunge into the oceans. Elsewhere, ancient shorelines stand as terraces above the surf. Streams and rivers break through the coastal mountains and lowlands and, in some places, flow into bays and lagoons rimmed with wetlands. Offshore, islands and rocks break the surface.

This is what we can easily see. But beneath the surface of the water offshore, California's dramatic geological formations continue. Unlike the Atlantic or Gulf coasts, California's shallow continental shelf is quite narrow, generally no wider than 5 miles. At its broadest point off San Francisco, the shelf extends 30 miles offshore before plunging from 600 feet to the abyssal region at 6,000 feet. Beyond state waters, peaks called seamounts rise from the depths and

are generally recognized as areas where prey species aggregate, attracting a variety of marine life.

Whether near or far from shore, the ocean bottom may be rocky, sandy, or silty. It may be flat or formed of rocky reefs. In areas along the coast, great canyons cut into the continental shelf quite close to shore. For example, the Monterey submarine canyon, which is larger than the Grand Canyon of the Colorado, begins within miles of the shoreline. There, as in other submarine canyons, marine life normally found far offshore occurs close to land in the deep waters. Off southern California, the ocean bottom appears like a piece of crumpled paper, with basins, troughs, canyons, peaks, and cliffs alternating in a checkerboard pattern.

Ocean currents introduce other dimensions to California's coastal waters. For much of the year, the California Current brings colder northern waters southward along the shore as far as southern California. There, where the coastline juts eastward, the California Current moves offshore. In the gap between the California Current and the mainland, the Southern California Countercurrent flows into the Santa Barbara Channel. Around Point Conception, these two currents meet, creating a rich transition zone. Closer to shore and deeper, the California Undercurrent also carries warmer water northward.

Seasonal changes in wind direction commonly create seasonal patterns for these currents. Beginning in March, for instance, northwesterly winds combine with the rotation of the Earth to drive surface waters offshore, triggering the upwelling of cold, nutrient-rich water from the depths. Fueled by sunlight and these nutrients, single-celled algae bloom and create a rich soup that fuels a blossoming of marine life, attracting larger animals from seabirds and swordfish to humpback and blue whales.

By September, as the northwesterly winds die down, the cold water sinks again and warmer waters return to the coast. This oceanic period lasts into October, when the predominant winds move to the southwesterly direction. These winds drive a surface current, called the Davidson Current, which flows north of Point Conception and inside the California Current, generally lasting through February.

Laid over this general pattern are both short-term and long-term changes. Local winds, topography, tidal motions, and discharge from rivers create their own currents in nearshore waters. Less frequently, a massive change in atmospheric pressure off Australia floods the eastern Pacific with warm water, which suppresses the normal pattern of upwelling. These short-term climatic changes, called El Niño, reduce the productivity of coastal waters, causing some fisheries and seabird and marine mammal populations to decline and others to increase. For instance, warm waters that flow north in an El Niño carry the larva of California sheephead and lobster from the heart of their geographical range in Mexico into the waters off California.

Other oceanographic changes last for a decade or more and these natural fluctuations can have significant impacts on the health and composition of marine life. In these regime shifts, water temperatures rise or fall significantly, causing dramatic changes in the distribution and abundance of marine life. The collapse of the California sardine fishery occurred when heavy commercial fishing continued on sardine populations that were greatly reduced by a cooling of offshore waters in the late 1940s and early 1950s. In response to the decline in sardines, California law severely curtailed the catch. In 1977, waters off California began warming and

remained relatively warm. The warmer water temperatures were favorable for sardines, whose abundance greatly increased. But the warmer waters also reduced the productivity of other fish, including many rockfishes, lingcod, sablefish, and those flatfishes that favor cold water for successful reproduction.

Currents and other bodies of water may differ dramatically in temperature and chemistry, as well as speed and direction. These factors all influence the kinds of marine life found in different bodies of water. In general terms, geography, oceanography, and biology combine to divide California marine fisheries and other marine life into two major regions north and south of Point Conception. Within each region, other differences emerge. Conservation and use of California's marine life depends partly upon recognizing these differences.

### ***Marine Life of California***

The waters off California are host to hundreds of species of fish and marine plants and algae. Thousands of species of marine invertebrates inhabit the sea floor from tidepools along the shoreline to muddy plains thousands of feet deep. Dozens of species of coastal and offshore birds spend some part of the year in California's waters, as do 35 species of marine mammals.

This great variety of marine life reflects the different responses of groups of animals and plants to changing environmental conditions over long periods of time. In successfully meeting their needs for growth, survival, and reproduction, individual species have developed a set of characteristics that biologists call life history traits. These traits include age at maturity, maximum age, maximum size, growth rate, natural mortality rate, and feeding and reproductive strategies.

Differences among species can be dramatic. For instance, California market squid mature within 12 months and die soon after spawning, whereas widow rockfish do not mature until age five at the earliest and may live as long as 59 years. This has profound consequences for managing fisheries so that they are sustainable.

Reproductive strategies also vary. Queenfish, for instance, may spawn 24 times in a season, ultimately releasing their body weight in eggs into the open water, where most will be eaten whether or not they are fertilized. In contrast, species such as olive rockfish spawn just once a year, releasing up to 500,000 larvae, which have been fertilized and developed internally. Other species, including sharks and surfperches, bear a small number of fully functional and live young each year.

Amid the variety, the life histories of fish tend to fall into several larger categories. For instance, fish species that have low rates of mortality as adults, such as many species of sharks, bluefin tuna, and billfish, also mature late and reproduce in smaller numbers. Organisms that have high rates of mortality as adults, such as anchovies and squid, mature early, and reproduce in large numbers. Some species spend the first several months of their lives floating as planktonic larvae in ocean currents. Climate and oceanographic changes influence the abundance of these species more than does the number of spawning adults. Many mollusks and some sharks produce eggs which are physically attached to the substrate until hatching. For these species, local conditions and predation play a major role in abundance.

Species differ also in their movements. For instance, during winter Dover sole move into deeper water where they reproduce, then move back into shallower water in the summer to feed. Pacific whiting migrate from their summer feeding grounds off Oregon and Washington to their winter spawning grounds off southern California and Baja California. By contrast, gopher rockfish, which can live to 30 years, venture less than a mile from their home range.

Individual plants and animals are part of larger communities that are linked in many ways. One of the clearest of relationships concerns what eats what, also known as the food web. Generally, this begins with herbivores, which consume plants that have manufactured food through photosynthesis. These herbivores may be as small as the larva of an anchovy or as large as a basking shark. The smaller herbivores pass along much of the food value of the plants when they are eaten by primary carnivores, which in turn may be consumed by higher level carnivores. Humans enter the food web at a variety of levels, removing not only higher level carnivores, but herbivores, and even the lowest level algae.

These relationships among wildlife populations differ considerably among different habitats and communities. A decrease in the abundance of some species, habitat alteration, or climate changes, for instance, can affect species that feed upon them. Conversely, an increase in predator species may reduce the abundance of prey species. Healthy habitat can also play an important role in the abundance of marine wildlife. A large percentage of the state's coastal wetlands have been destroyed or degraded, causing incalculable losses in coastal wildlife. Pollution of coastal waters can expose marine animals to toxic chemicals and can foster changes in plant communities that wildlife depends upon. A decrease in the abundance of some species, due to habitat alteration, pollution, fishing, or climate changes, can produce a ripple effect throughout the marine environment. Considering these interrelationships when managing fisheries requires an ecosystem perspective. In addition, it is important to consider existing risk-averse fishery management regulations that have, for example, restored species such as sardine to "fully recovered" status, and integrate these considerations into the ecosystem management context.

### ***Factors Affecting Marine Wildlife Populations***

The abundance and diversity of populations of marine wildlife are influenced by a wide range of natural and human-caused factors, including short-term and long-term shifts in oceanographic conditions and numerous human activities, which may have direct or indirect effects (Parrish and Tegner 2001; Sheehan and Tasto 2001; NRC 1995). The impact of each factor varies with distance from shore and with individual species.

Some types of natural phenomena, such as El Niño and La Niña fluctuations, in which especially warm or especially cool waters respectively dominate, may have transitory impacts on marine wildlife and their habitats, while other natural phenomena, such as longer-term shifts in oceanographic conditions, may affect the abundance of some types of marine wildlife over much longer periods (Parrish and Tegner 2001). Increasingly, fisheries managers are attempting to adjust to these natural phenomena.

As in other coastal states, the development and growth of California's population and economy, especially since World War II, introduced additional stresses to coastal ecosystems. Coastal development transformed coastal watersheds, wetlands, and estuaries, and placed

greater demands on coastal ecosystems. These stresses include chemical pollution and eutrophication (input of excessive nutrients into the environment), alteration of physical habitat, and the invasion of exotic species (NRC 1995). Intake structures for “once-through” cooling systems at electrical power plants kill marine life, and the thermal discharges from these facilities contribute the largest volume of effluent into California’s coastal ocean. Chemical pollution and eutrophication can alter the abundance and biodiversity of wildlife in coastal environments, especially bays and estuaries (NRC 1995). Pollution ranges from toxic chemicals to partially treated sewage, and the sources of potential pollution range from point sources, such as sewage treatment plants, to non-point sources, such as runoff from agricultural and urban lands (Sheehan and Tasto 2001). Similarly, estuarine and shoreline habitats have been especially affected by residential, commercial and industrial development (Sheehan and Tasto 2001).

The degree of impact from these stresses on water quality and habitats varies markedly along the state’s coastline. Storm-water runoff is a particular problem in major urban areas, while some waters of the central coast are most affected by agricultural runoff (Sheehan and Tasto 2001). San Francisco Bay’s waters are affected both by industrial discharges and by dairy farm runoff. In some areas, particularly bays and estuaries, waters are so impaired that certain uses are prohibited or restricted. Many north coastal streams are impaired due to sedimentation, habitat modification, altered temperature and eutrophication. Timber harvest activities in north coast watersheds are a particular concern.

In the last 35 years, both federal and state governments have carried out regulatory and other programs to reduce these threats to coastal ecosystems. At the federal level, the Clean Water Act launched an enormous effort to reduce the flow of sewage and industrial pollutants into coastal waters (Sheehan and Tasto 2001). Since 1990, the federal government, in cooperation with state governments, has encouraged efforts to reduce the flow of non-point source pollution. In July 2000, California was the first state in the nation to receive full federal approval of its Coastal Non-point Source Pollution Control Program by the U.S. Environmental Protection Agency and the National Oceanic and Atmospheric Administration (the lead federal agencies that administer the Clean Water Act and Coastal Zone Management Act, respectively). Storm water runoff from large and medium sized urban areas is now regulated as a point source under the National Pollutant Discharge Elimination System Program. The Governor’s ocean action plan outlines many other such programs.

Passage and implementation of the state coastal legislation in the 1970s slowed the rate of loss of sensitive coastal habitats, and in some areas, efforts are underway to restore converted wetlands. In the last several years, the state has devoted more resources to addressing coastal water quality and habitat, including major state bonds. Nonetheless, future population and economic growth will continue to stress on coastal ecosystems.

### ***The Marine Life Management Act***

Like these other factors, fishing can have impacts on marine fish populations and other wildlife and has likely been having these effects since humans began to harvest marine species (NRC 1995, Jackson, et al. 2001). California has long sought to manage fisheries in its waters for long-term sustainability. In 1998 the California State Legislature responded to the shifts in



understanding and public values as well as declines in some fisheries and nearshore ecosystems by adopting the Marine Life Management Act (MLMA; Stats. 1998, Chapter 1052).

Before the MLMA, the responsibility for managing most of California's marine resources harvested by commercial fisheries within state waters lay with the State Legislature, while the Department and the Commission managed the recreational fisheries and those commercial fisheries with catch quotas that changed periodically. Management of commercial fisheries under this division of responsibility was complicated, piecemeal, and often untimely, with necessary regulatory changes only occurring after much political deliberation and approval by both the California State Assembly and California State Senate.

The MLMA transferred permanent management authority to the Commission for the nearshore finfish fishery, the white seabass fishery, emerging fisheries, and other fisheries for which the Commission had some management authority prior to January 1, 1999. As importantly, the MLMA broadened the focus of fisheries management to include consideration of the ecosystem - the entire community of organisms (both fished and unfished) and the environment and habitats that those species depend on.

### ***Recent Developments***

The Marine Life Protection Act was enacted in 1999. (See Appendix A for text of the MLPA, as amended.) In doing so, the California State Legislature recognized the benefits of setting aside some areas under special protection and of ensuring that these marine protected areas (MPAs) were developed in a systematic manner, with clear goals and objectives, and management plans and programs for monitoring and evaluating their effectiveness. Rather than focusing on one use or value for marine protected areas, the MLPA recognized a wide range of values, including the conservation of biological diversity<sup>1</sup>.

Between the MLPA's passage in 1999 and the creation of the MLPA Initiative in 2004, there were two efforts at implementation. Both attempts suffered from a lack of adequate resources. The first attempt did not ensure a robust multi-stakeholder involvement. Both attempts failed to provide sufficient information needed by stakeholders, particularly regarding the potential socioeconomic impacts of potential MPAs (See Appendix C for a more detailed description of MLPA implementation).

The first attempt became problematic when the Department and the MLPA Master Plan Team developed a set of initial proposals for a statewide network of MPAs without significant stakeholder input, even though the intent was to revise these initial proposals based on public comment as required by the MLPA. The second attempt was more inclusive of stakeholders, but suffered from a lack of staff and funding. After these unsuccessful attempts, state legislators and the Department realized that this complex and controversial process required significant resources and time to implement and evaluate successfully.

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<sup>1</sup> Biological diversity or "biodiversity" is defined by Public Resources Code Section 12220(b) as: a component and measure of ecosystem health and function. It is the number and genetic richness of different individuals found within the population of a species, of populations found within a species range, of different species found within a natural community or ecosystem, and of different communities and ecosystems found within a region.

Since passage of the MLPA in 1999, the Pacific Fishery Management Council established several major recreational and commercial fishery closures to protect lingcod and certain populations of rockfish that were declared overfished<sup>2</sup> by the National Marine Fisheries Service (lingcod has subsequently been declared recovered, though the southern part of the stock is still estimated to be at low levels). The closures, which remain in effect today, are generally based on depth and affect certain types of bottom-fishing gear. The closures have changed in both their total area and season several times.

The primary closures are the Cowcod Conservation Areas in southern California, which are almost entirely in federal waters, and the Rockfish Conservation Area, which is statewide and encompasses portions of state and federal waters. The total area included in State waters within the Cowcod Conservation Area is approximately 135 square nautical miles or 3.5% of all State waters. Within this area certain types of trapping and surface fishing are allowed, as well as some trawling.

While portions of the Rockfish Conservation Area are open seasonally to bottom fishing gears which impact groundfish, and the whole area is open to surface fishing, certain depth zones in certain parts of the state are closed to groundfish take year-round. The area within State waters which is closed to groundfish take year-round is about 190 square nautical miles or 4% of all State waters. These figures are based on the 2005 fishing regulations, which may change.

Such fishery conservation measures are similar to certain types of limited-take MPAs and can function as *de facto* MPAs. One important distinction between these closures and MPAs is that the former, while potentially of long-term duration, change based on assessments of specific stocks. Once the goal of rebuilding overfished populations is achieved, such closures may be abolished or greatly reduced. In contrast, MPAs are likely to be abolished if they fail to achieve such objectives as biodiversity conservation and habitat protection.

A significant increase in the total amount of state waters included in MPAs occurred in 2003 when the Commission established a system of 12 new MPAs (10 state marine reserves and 2 state marine conservation areas) around the Santa Barbara Channel Islands. The establishment of the 10 Channel Islands state marine reserves increased the area of state waters in marine reserves from 0.2% to 2.5%. This occurred after an initial year of discussion in the Commission, an approximately two and a half year stakeholder-based process, and another 1.5 years of public regulatory process. Monitoring of the new MPAs, and of the effect they are having on local fishing patterns, is now occurring. The details of the Channel Islands monitoring program are available at [www.dfg.ca.gov/mrd/channel\\_islands](http://www.dfg.ca.gov/mrd/channel_islands).

### ***Marine Protected Areas Generally***

California is able to take advantage of several decades of experience and study regarding MPAs elsewhere in the United States and abroad, as well as within its own waters. While most of this experience is with no-take reserves, it can be applied generally to other MPAs. In 2001,

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<sup>2</sup> The Federal definition of “overfished” generally describes any stock or stock complex determined to be below its overfish/rebuilding threshold (the default proxy of which is 25% of its estimated unfished biomass). Note that stocks may become overfished for a variety of reasons, including non-fishing impacts.

for instance, a committee of the National Academy of Sciences released its report *Marine Protected Areas: Tools for Sustaining Ocean Ecosystems*. Like other reports of the National Academy of Sciences, this report can be considered an authoritative general review of the science of marine protected areas (OMB 2004). Many of their conclusions, while directed to marine reserves, may have applicability to other MPAs. Among other things, this expert panel concluded:

- A growing body of literature documents the effectiveness of marine reserves for conserving habitats, fostering the recovery of overexploited species, and maintaining marine communities.
- Networks of marine reserves, where the goal is to protect all components of the ecosystem through spatially defined closures, should be included as an essential element of ecosystem-based management.
- Choosing a location for a marine reserve or protected area requires an understanding of probable socioeconomic impacts as well as the environmental criteria for siting.
- It is essential to involve all potential stakeholders at the outset to develop plans for MPAs that enlist the support of the community and serve local conservation needs.
- Marine reserves and protected areas must be monitored and evaluated to determine if goals are being met and to provide information for refining the design of current and future MPAs and reserves.
- Sufficient scientific information exists on the habitat requirements and life-history traits of many species to support implementation of marine reserves and protected areas to improve management.

Since the National Academy of Sciences report, a vigorous discussion among scientists and decision makers has explored the benefits and costs of MPAs, particularly marine reserves (Nowlis and Friedlander 2004; Hilborn et al. 2004; SSC 2004; NFCC 2004; FAO 2004). Many of these discussions have focused upon the use of marine reserves as a fisheries management tool and on the effect of marine reserve designation on fishing operations, fisheries management, and fish populations outside reserves. There has been virtually no discussion of the value and design of other types of MPAs, such as marine parks and marine conservation areas.

Recent literature supports the potential value of marine reserves for protecting habitat and biodiversity within reserve boundaries (Nowlis and Friedlander 2004; Hilborn et al. 2004; FAO 2004). This same literature cites several potential benefits of marine reserves to fisheries management, including buffering against uncertainty, reducing collateral ecological impacts (e.g., bycatch and habitat damage), managing multi-species fisheries, and improving knowledge. Empirical evidence for increased fish catches outside marine reserves is sparse, although there are strong reasons to believe that if designed properly, marine reserves can contribute to fisheries management in some circumstances (Nowlis and Friedlander 2004; Hilborn et al. 2004). Without experience gained from the establishment of additional marine

reserves, assessing the appropriateness of marine reserves for fisheries enhancement purposes will remain difficult.

At the same time, potential problems with marine reserves have been cited, including possible shifts in fishing effort, disruption of stock assessment research, and socioeconomic impacts (Hilborn et al. 2004; FAO 2004; SSC 2004). Empirical evidence for these potential impacts is sparse, as well. These authors urge care in the design of marine reserves so as to minimize losses to fisheries and to increase the opportunity to obtain empirical information on marine reserves by careful experimental design (Hilborn et al. 2004; SSC 2004). These studies also note that for certain species, especially species with highly mobile adults, marine reserves are unlikely to benefit fisheries (Nowlis and Friedlander 2004; Hilborn et al.; SSC 2004; NFCC 2004). When designing marine reserves or other MPAs with a goal of enhancing fisheries, the target species and potential impacts must be considered.

It is important to remember that a primary purpose of the MLPA is to develop a plan and implement a program that will protect and restore marine biodiversity and ecosystems. The MLPA recognizes that MPAs may be a tool to accomplish those purposes, but they are not the only tool. Implementation of the MLPA must consider and respect other efforts, including traditional fishery management, water quality controls and coastal development management, in order to avoid duplication and conflicts in the state's efforts to protect California's ocean environment.

### ***MLPA Initiative Process***

In August 2004, a new effort was launched to implement the MLPA. Combining public and private sources of support, the MLPA Initiative had four key objectives to achieve by December 2006:

- the development of a draft master plan framework;
- the development of alternative proposals for an MPA network component in a central coast study region;
- recommendations on funding sources for MPA implementation and management; and
- recommendations to increase the coordination between state and federal agencies with authority to manage ocean resources.

The first two of these products were provided to the Department for its consideration and submission to the Commission, which will take action through its normal process. These products are intended to provide a strong foundation for completing the statewide network of MPAs by 2011.

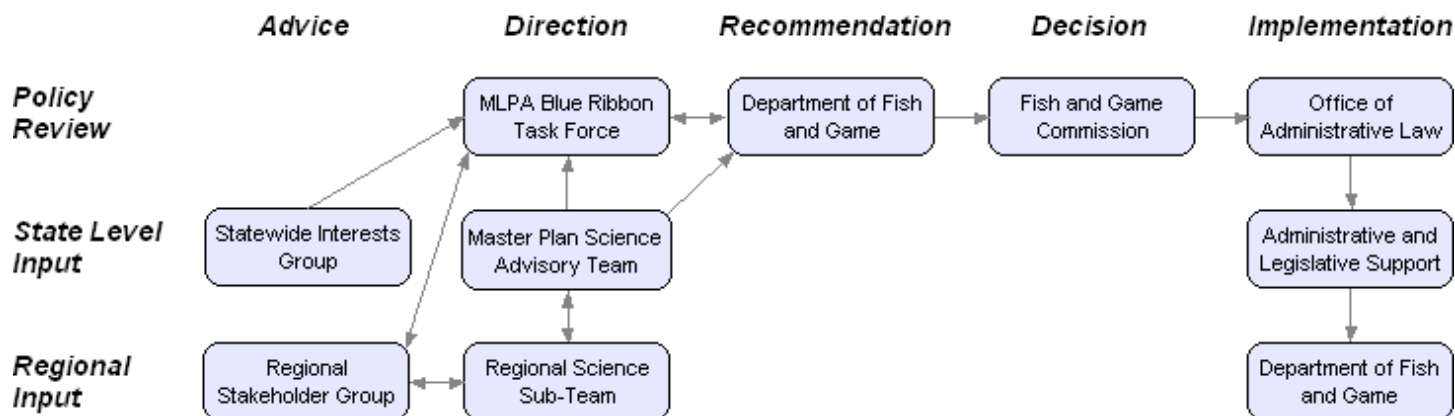
The MLPA Initiative process included the following groups and organizations:

- MLPA Blue Ribbon Task Force (an oversight body)
- MLPA Initiative staff
- Science Advisory Team (an expansion of the former Master Plan Team with additional expertise)
- Science Advisory Sub-Team for the central coast region
- MLPA Statewide Interests Group for providing advice on the initiative process
- Regional stakeholder group for the central coast region

- Peer review of SAT guidelines for developing networks of MPAs and of the application of those guidelines in evaluating proposed packages
- Department staff
- Commission

Figure 1 portrays the links among the various players in the initiative process. See Appendix D for a description of stakeholder participation strategies.

Figure 1. Players in the Marine Life Protection Act Initiative.



Note: input is solicited from the interested public and stakeholders at each step, until adoption of regulations by the Commission.

## ***Roles in the Marine Life Protection Act Initiative***

### ***Organizational Partners, Committees, and Teams***

The Commission is the ultimate decision-making authority for implementation of the MLPA. Specifically, the Commission makes all final decisions on the master plan, the proposed regional marine protected area proposals, and supporting CEQA documentation, all after completing its own process of public reviews. The principal mission of the other partners is to support the Commission in making sound policy decisions required by the MLPA. Although the Commission was not involved in the day-to-day work of the MLPA Initiative, the initiative provided regular opportunities for informational meetings and strategic consultation with the Commission.

The California Resources Agency provides general oversight and public leadership for the initiative and implementation of the MLPA. Besides providing policy direction for coordinating funding and staffing, the agency made critical decisions in shaping the initiative. The secretary of the California Resources Agency selected the chair and other members of the MLPA Blue Ribbon Task Force. The secretary convened and charged the members of the task force with meeting the objectives identified in the task force description below. The California Resources Agency is also seeking adequate current and future funding for agency and Department personnel committed to the initiative and for completing future phases of the MLPA.

The Department serves as the lead agency for the design and implementation of the MLPA master plan and a statewide network of marine protected areas. The Department continues its traditional support of the Resources Agency and the Commission. In consultation with the

Agency secretary, the Commission president, and the task force chair, the director of the Department selected the members of the science team. Through the initiative's Steering Committee (described below), the Department assisted the development of the draft master plan framework and proposals for marine protected areas along the central coast, and is ultimately responsible for presenting a final draft master plan and alternatives for marine protected areas in each region, including preferred alternatives for each region, to the Commission. The Department also provides biological, enforcement and other relevant information, participates in meetings as appropriate, reviews working documents, and acts as lead agency under the California Environmental Quality Act, among other activities.

The MLPA Blue Ribbon Task Force is composed of distinguished, knowledgeable and highly credible public leaders selected by the secretary of the California Resources Agency. The charge to the task force was to oversee the preparation of the draft master plan framework and the development of alternative proposals for marine protected areas in an area along the central coast for the Department to present to the Commission; to prepare a comprehensive strategy for long-term funding of planning, management and enforcement of marine protected areas; and to develop recommendations for improved coordination of managing marine protected areas with federal agencies involved in ocean management. The task force also worked to resolve policy disputes and provide direction in the face of uncertainty, while meeting the objectives of the MLPA. The chair of the task force selected the executive director of the MLPA Initiative, who in turn selected the senior MLPA project manager, operations & communications manager, and central coast MLPA project manager; worked with the director of the Department to convene and direct the science team; and served as the principal link between the task force and initiative staff. Several task force members served as liaisons to the central coast project.

The Resources Legacy Fund Foundation used its best efforts to obtain, coordinate and administer philanthropic investments to supplement public funding for the MLPA Initiative, provides strategic advice to the California Resources Agency on public-private funding, and supported the initiative staff in managing private contracts for the initiative.

Other state and federal agencies played a variety of roles in the initiative. For instance, federal agencies, such as NOAA Fisheries, the National Ocean Service, and the National Marine Sanctuary Program, are valuable sources of information and may have programs that should be taken into account in designing regional MPAs. State agencies may play a similar role.

The director of the Department, in consultation with the chair of the task force, the secretary of the agency, and the president of the Commission, convened the Master Plan Science Advisory Team (science team). The science team was composed of the members required by the MLPA, including staff from the Department, the Department of Parks and Recreation, the State Water Resources Control Board, one member appointed from a list provided by Sea Grant, and an expanded group of scientists knowledgeable in marine ecology, fisheries science, marine protected areas, economics and the social sciences. The role of the science team was to assist the task force in developing the draft master plan framework by reviewing supporting and draft documents, addressing scientific issues, and framing and referring policy challenges to the task force. The science team reported to the task force and the director of the Department.

A sub-team of the science team serves the central coast project. The Science Advisory Sub-Team for the central coast region was composed of members of the science team, and worked with the central coast project manager and central coast stakeholder group to develop alternative marine protected area proposals by reviewing supporting and draft documents, addressing scientific issues and information provided by the central coast stakeholder group, and framing and referring policy challenges to the task force. At least one member of the science sub-team attended each central coast stakeholder group meeting. This group continues to assist the Department in reviewing and analyzing MPA packages for the central coast.

The MLPA Regional Stakeholder Group included key, affected members of the central coast study region who were able and willing to provide information that assisted in the development of proposed alternative network components of marine protected areas. The director of the Department and the central coast liaison of the task force solicited nominations, and selected from the nominees a representative group that met regularly over the course of the regional process to provide input to the regional project manager, provide information and other input for framing key scientific questions to be addressed by the science advisory sub-team, and worked as a group to develop alternative proposals for MPAs. The Department provided enforcement staff support to the group for information and input on enforcement issues.

The MLPA Statewide Interests Group was composed of members from key interest groups to advise the task force and staff on the overall MLPA Initiative process. The group did not vote or otherwise take formal positions on any procedural or substantive issues, but instead alerted the task force and staff to issues and opportunities that could improve public involvement in the initiative process.

The MLPA Steering Committee was chaired by the MLPA Initiative's executive director, and included the Department's MLPA policy advisor, statewide technical advisor, MPA mandate coordinator, and central coast regional coordinator, and the initiative's senior project manager, operations & communications manager, and central coast project manager. The committee was responsible for coordinating all work necessary to achieve each of the objectives of the initiative.

#### *Other Staff*

Both the MLPA Initiative and Department hired and contracted a variety of other staff to help support the initiative process. Examples of these staff included biological technicians, scientific advisors, research writers, and administrative support staff. In other regions, similar levels of staffing, preferably within the Department, will be necessary to properly support the planning process.

#### **Master Plan Framework and Master Plan**

The MLPA calls for the development of a master plan by the Department, and its adoption by the Commission<sup>3</sup>. The MLPA Initiative divided the master plan into two principal parts: a section providing guidance in the application of the MLPA to the development of a statewide

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<sup>3</sup> The Fish and Game Code requires the Department to provide a draft master plan to the Commission by January 2005 and the Commission to adopt a final master plan with regulations by December 2005 [Section 2859, FGC].

MPA network (the master plan framework), and a section describing the preferred alternatives for MPA proposals. The MLPA Initiative envisioned a focus on portions of the state in a series of regional processes, beginning with the central coast. The requirement for a full master plan and implementing regulations will be met when the Commission adopts the final portion of the plan and all regions of the coast have been completed. The present master plan includes descriptions of MPAs only for those regions which have been completed.

It is important to emphasize that the physical, biological, social and economic conditions in each region of the state will affect the specific application of the MLPA and the processes recommended in this document. For example, California coastal waters, especially those in southern California, are critical for our nation's military both for training and testing as well as operations. The United States Department of Defense controls two of the Channel Islands and has installations along significant portions of the mainland coastline. Many of the operational ocean areas are significantly restricted to public access. Based on inputs from the Department of Defense, the designation of MPAs in specified operational areas of the military may not be consistent with military readiness. Therefore, in assessing the overall MLPA network, the beneficial effects of military operational areas (as well as other *de facto* MPAs such as long-term closures implemented through fishing regulations), with respect to habitat conservation goals will be considered in the needs assessment.

The central coast effort provided concrete experience in applying the master plan framework and this more specific guidance to a specific area. This experience was used to recommend changes incorporated in the present master plan document. In this way, the master plan framework served as the foundation for an evolution of practice that will continue to be adapted to new information as well as serving as a blueprint for developing a statewide MPA network.

The following points summarize changes made to the master plan framework in order to respond to the lessons learned in the central coast and to convert what was a framework document into a more complete master plan for the central coast:

- **Section 1. Introduction:** references to the MLPA Initiative have been adjusted to indicate the Initiative's role in the central coast process versus the ongoing role of the Department in other regions.
- **Section 2. Process for Designing Alternative Marine Protected Area Network Proposals:** The specific proposed regional boundaries and timeline for completion was added to provide guidance for the entire state process.
- The process steps for developing alternative MPA proposals within a region have been simplified and restructured. These changes reflect the actual process used in the central coast as compared to the suggested process in the framework.
- **Section 3. Considerations in the Design of MPAs:** The scientific guidance on MPA design was modified in response to peer review comments from the Oregon Seagrass review panel. These changes were primarily in the form of minor text edits for clarity.
- The scientific guidance was also modified to describe how the SAT considered the varying levels of protection in different types of MPAS.
- **Section 4. Management:** This section was completely revised based on information provided during the central coast process on the development of regional management plans. The outline provided in this section was then used in developing the central coast management plan (Section 8).



- **Section 5. Enforcement:** No changes were made to this section. Details on enforcement plans for each region are found in Section 8.
- **Section 6. Monitoring and Adaptive Management of MPAs:** No changes were made to this section. Details on monitoring and adaptive management plans for each region are found in Section 8.
- **Section 7. Funding:** This section was completely revised based on information and recommendations provided by the Blue Ribbon Task Force during the central coast process. In addition, details on costs and potential funding sources for each region are found in Section 8.
- **Section 8. Regional MPA Management Plans:** This new section fulfills the MLPA requirement that the master plan include: recommended networks of MPAs; a preferred alternative; and recommendations for monitoring, enforcement, and funding.
- **Appendices:** Informational documents developed during the central coast process have been added to the list of appendices.